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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,379	03/01/2004	Junichi Hibino	62478-6517	9369

7590 05/13/2005  
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EXAMINER

COLON, GERMAN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 05/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/790,379

Applicant(s)

HIBINO ET AL.

Examiner

German Colón

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7, 12-15, 36, 38, 43 and 60-72 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2-4, 12-14 and 61-72 is/are allowed.
- 6) ☒ Claim(s) 1, 5, 7, 15, 36, 38 and 43 is/are rejected.
- 7) ☒ Claim(s) 5 and 60 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☒ Certified copies of the priority documents have been received in Application No. 09/786,692.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 03/01/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Preliminary Amendment*

1. The Pre-Amendment, filed on March 01, 2004, has been entered and acknowledged by the Examiner.
2. Cancellation of claims 6, 8-11, 16-35, 37, 39-42 and 44-59 has been entered.
3. Addition of claims 60-72 has been entered.

### *Claim Objections*

4. Claims 5 and 60 are objected to because of the following informalities:

The claims recite the limitation of “*the* relative positions”, however, there is no antecedent basis for the limitation.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 5, 7, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki et al. (EP 0 945 886) in view of Lai et al. (US 6,068,532).

Regarding claims 1 and 36, Sasaki discloses a display panel manufacturing method (see at least Fig. 2 and respective description), comprising an application process for applying a

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bonding agent **31** to a plurality of barrier ribs **50** formed on at least one of a pair of substrates **108,104**, and a connection process for arranging the pair of substrates in opposition and connecting the pair of substrates together via the bonding agent that has been applied to the barrier ribs. Sasaki is silent regarding the process including the steps of “forming a layer of paste-like bonding agent having an even surface over a substrate having an even surface”; and “simultaneously bringing a top of each barrier rib down into contact with the bonding agent layer, while regulating a distance between the upper surface of the bonding agent layer and the barrier ribs”.

However, Lai discloses a method of manufacturing a display panel comprising a plurality of barrier ribs **20**, the method including the steps of forming a layer **40** of paste-like bonding agent having an even surface over a substrate having an even surface (see Fig. 2A), and simultaneously bringing a top of each barrier rib down into contact with the bonding agent layer, while regulating a distance between the upper surface of the bonding agent layer and the barrier ribs (see Figs. 2B-2C), and teaches this process to provide excellent adhesion of the bonding agent to the barrier ribs' tops in a simple and reliable manner without complicated steps, which prevents possible collapse of the substrates (see at least Col. 5, lines 60-65; and Col. 6, lines 1-2, 9, 25-27 and 65-67). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Lai to apply the bonding agent to the barrier ribs in order to provide excellent adhesion of the bonding agent to the barrier ribs' tops in a simple and reliable manner without complicated steps, which prevents possible collapse of the substrates.

The Examiner notes that while Lai exemplifies the display panel as an FED, the teachings can be applied to other display panels such as a PDP. (As a background information see US 6,152,796, Col. 3, lines 50-55, for support of the aforementioned statement).

Regarding claim 5, Sasaki-Lai discloses relative positions of the bonding agent being altered with the barrier rib tops in contact with the bonding agent (see `532, Figs. 2B-2C, and respective description).

Referring to claim 7, Sasaki-Lai discloses the claimed invention except for the limitation of the bonding agent applying process being repeated a plurality of times. However, Lai discloses the barrier ribs being dipped into the bonding agent layer such that the barrier ribs are adequately coated with the adhesive materials, and that the coating process depends on the viscosity of the bonding agent (see `532, Col. 6, lines 35-42 and 63-67). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to repeat the bonding agent applying process in order to adequately coat the barrier ribs with the adhesive material.

Referring to claim 38, Sasaki-Lai discloses the transfer process heats parts of the bond sheet in contact with the barrier rib tops (see `532, Col. 7, lines 45-47).

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki-Lai as applied to claim 1 above, and further in view of Murai et al. (US 5,754,003).

Sasaki-Lai discloses the claimed invention except for the limitation of "including a process for leveling the barrier ribs across almost the entire surface of the substrate so that all the barrier ribs tops are at approximately the same height".

However, in the same field of endeavor, Murai discloses a method of manufacturing a display panel comprising a plurality of barrier ribs and teaches a process for leveling the barrier ribs across almost the entire surface of the substrate in order to provide air-tight discharge chambers separated from each other while reducing poor flatness and deterioration of the display (see Col. 4, lines 33-39; and Col. 6, lines 5-9). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to carry out a leveling process with the purpose of providing air-tight discharge chambers separated from each other while reducing poor flatness and deterioration of the display.

8. Claim 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki-Lai as applied to claim 1 above, and further in view of Browning (US 6,030,267).

Sasaki-Lai discloses the claimed invention except for the limitation of "the bonding agent being arranged on the barrier ribs using a compound including a substance which is more difficult to melt than the bonding agent". However, in the same field of endeavor, Browning teaches a manufacturing process for display panels wherein a bonding agent includes a substance more difficult to melt than the bonding agent with the purpose of accurately maintaining an alignment of the substrates as fast as possible and at low temperatures (see Col. 2, lines 32-36 and 54-55). Thus, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the teachings of Browning of providing a bonding agent comprising a substance which is more difficult to melt than the bonding agent in order to accurately maintaining an alignment of the substrates as fast as possible and at low temperatures.

*Allowable Subject Matter*

9. Claims 2-4, 12-14 and 61-72 are allowed.
10. Claim 60 would be allowable if rewritten or amended to overcome the objection, set forth in this Office action.

11. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 2, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in the claims, and specifically comprising the limitation of “a bonding agent <sup>layer</sup>~~layer~~ forming step for forming a layer of a paste-like bonding agent having an even surface so as to embed a *position regulating member* that regulates positions of the barrier ribs within the layer; and applying the bonding simultaneously to the tops of all of the barrier ribs while regulating a distance between the upper surface of the bonding agent and the barrier ribs”.

Regarding claims 12-14, 60, 61, 67 and 70, the claims are allowable for their dependency status from claim 2.

Regarding claim 3, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in the claims, and specifically comprising the limitation of “a bonding agent <sup>layer</sup>~~layer~~ forming step for forming a layer of a paste-like bonding agent having a curved surface so as to embed a *position regulating member* that regulates positions of the barrier ribs within the layer; and to move the position regulating member along a length of the barrier ribs to apply the bonding agent to the tops of all the barrier ribs while regulating a distance between the upper surface of the bonding agent and the barrier ribs”.

Regarding claims 62, 64-66, 68 and 71, the claims are allowable for their dependency status from claim 3.

Referring to claim 4, the references of the Prior Art of Record fail to teach or suggest the combination of the limitations as set forth in the claims, and specifically comprising the limitation of “a connecting step for momentarily bringing one part of each barrier rib top into contact with the bonding agent layer, and then altering the relative positions of the barrier ribs and the bonding agent layer while maintaining a distance between the barrier ribs and the bonding agent layer such that the bonding agent is applied to all the barrier rib tops as a result of surface tension”.

Referring to claims 63, 69 and 72, the claims are allowable for their dependency status from claim 4.

#### *Contact Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to German Colón whose telephone number is 571-272-2451. The examiner can normally be reached on Monday thru Thursday, from 8:30 to 6:00.

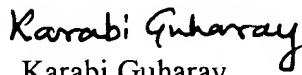
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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